CLAIMS

What is claimed is:

1. An apparatus for replacing a spent fluid in a power steering system of a vehicle, the apparatus comprising the components of: a fluid receiving container for receiving the spent fluid; a replacement fluid container holding a replacement fluid; a fluid pump; a pressure actuated valve; and a means for conducting fluid; the components arranged and sized and interconnected tightly such that when the spent fluid is pumped from the power steering system into the fluid receiving container by the fluid pump, air pressure in the fluid receiving container rises opening the pressure actuated valve and forcing the replacement fluid from the replacement fluid container into the power steering system to replace the spent fluid therein; the pressure actuated valve being set to open only after a selected percent of the spent fluid has already been removed from the power steering system.
2. The apparatus of claim 1 wherein the pressure actuated valve and the fluid conducting means are sized and configured so that the pressure actuated valve opens when between 80 and 90 percent of the spent fluid has been transferred to the fluid receiving container.
3. The apparatus of claim 1 further comprising a shutoff valve positioned between a source of compressed air and the fluid receiving container for pressurizing thereof, and further comprising a fluid drain valve positioned between the fluid receiving container and the suction tube for enabling isolating of the fluid receiving container and for dispensing the spent fluid.
4. The apparatus of claim 1 further comprising a suction line tube terminating with a magnetic suction nozzle for capturing metal finds in the fluid.
5. A method for replacing a power steering fluid, the method comprising the steps of: interconnecting a fluid interchange apparatus with a power steering system of a vehicle; pumping spent fluid from the power steering system into a fluid receiving container to compress air pressure therein; interconnecting, with a pressure actuated valve, the fluid

receiving container and a replacement fluid container, the replacement fluid container holding a replacement fluid; automatically opening the pressure actuated valve when a selected percent of the spent fluid from the power steering system is transferred into the fluid receiving container resulting in an air pressure sufficient to open the pressure actuated valve; and draining, under the force of the sufficient air pressure, the replacement fluid from the replacement fluid container into the power steering system to replace the spent fluid in the power steering system with the replacement fluid.

6. The method of claim 5 further comprising the steps of: mutually securing a suction tube and a delivery tube of the fluid interchange apparatus; engaging the suction and delivery tubes with the spent fluid of the power steering system of the vehicle; and applying suction to the suction tube to remove the spent fluid from the system.

7. The method of claim 6 comprising the further steps of: pressurizing the fluid receiving container, withdrawing the suction tube from the power steering system, and discharging the spent fluid in the fluid receiving container into a waste receptacle through the suction tube.

8. An apparatus for replacing a spent fluid in a power steering system of a vehicle, the apparatus comprising the components of: a fluid receiving container for receiving the spent fluid; a replacement fluid container holding a replacement fluid; a fluid pump; a pressure actuated valve; and a means for conducting fluid; the components arranged and sized and interconnected such that when the spent fluid is pumped from the power steering system into the fluid receiving container by the fluid pump, air pressure in the fluid receiving container rises forcing the replacement fluid from the replacement fluid container into the power steering system to replace the spent fluid therein; the placements and sizes of the components adapted so that the replacement fluid only starts to flow into the power steering system after a selected percent of the spent fluid has been already removed from the power steering system.

9. The apparatus of claim 8 wherein the placements and sizes of the components are adapted so that the flow rate of replacement fluid is less than the flow rate of the spent fluid.

10. The apparatus of claim 8 wherein the replacement fluid starts to flow into the power steering system when between 80 and 90 percent of the spent fluid has been transferred to the fluid receiving container.

11. The apparatus of claim 8 further comprising a shutoff valve positioned between a source of compressed air and the fluid receiving container for pressurizing thereof, and further comprising a fluid drain valve positioned between the fluid receiving container and the suction tube for enabling isolating of the fluid receiving container and for dispensing the spent fluid.

12. The apparatus of claim 8 further comprising a suction line tube terminating with a magnetic suction nozzle for capturing metal finds in the fluid.

13. A method for replacing a power steering fluid, the method comprising the steps of: interconnecting a fluid interchange apparatus with a power steering system of a vehicle; pumping spent fluid from the power steering system into a fluid receiving container to compress air pressure therein; interconnecting, the fluid receiving container and a replacement fluid container, the replacement fluid container holding a replacement fluid; positioning the containers and fluid conductors therebetween relative to the power steering system such that when a selected percent of the spent fluid from the power steering system is transferred into the fluid receiving container resulting air pressure in the spent fluid container is sufficient to start draining, under the force of the sufficient air pressure, the replacement fluid from the replacement fluid container into the power steering system to replace the spent fluid in the power steering system with the replacement fluid.

14. The method of claim 13 further comprising the steps of: mutually securing a suction tube and a delivery tube of the fluid interchange apparatus; engaging the suction and delivery tubes with the spent fluid of the power steering system of the vehicle; and applying suction to the suction tube to remove the spent fluid from the system.

15. The method of claim 13 comprising the further steps of: pressurizing the fluid receiving container, withdrawing the suction tube from the power steering system, and discharging

the spent fluid in the fluid receiving container into a waste receptacle through the suction tube.

16. The method of claim 13 further comprising the steps of: positioning a suction line tube and a delivery tube, the tubes jointly engaged and movable, into a reservoir of the power steering system, wherein the suction line tube is positioned for sucking spent fluid out of the reservoir to the spent fluid container, and the delivery tube is positioned for delivering replacement fluid to the reservoir from the replacement fluid container; and determining the amount of fluid delivered to the reservoir by placing the tubes alternately and cyclically adjacent to a bottom surface of the reservoir until the reservoir is empty, and at an upper most position in the reservoir until the reservoir is filled.